



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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December 22, 1995

Robert E. Dunne
Project Manager
Kennecott Utah Copper
P.O. Box 352
Bingham Canyon, Utah 84006

Re: DOGM Review of Supplement No. 2, Notice of Tentative Approval, Kennecott Utah Copper, Tailings Modernization Project - North Impoundment Expansion, M/035/015, Salt Lake County, Utah

Dear Mr. Dunne:

The Division has reviewed the additional information titled "DOGM Supplement No. 2" submitted in response to our September 19, 1995 review letter. We received this supplement on October 16, 1995. In addition, we have reviewed the information provided by Shepherd Miller, Inc. and Schafer and Associates in response to our informal comments discussed during the October 2, 1995 acidification potential seminar.

After reviewing this information, and in consideration of the additional technical discussions and agreements reached during our December 20, 1995 meeting with you and the Division of Water Quality, the Division is now prepared to grant its tentative approval of your permit application for the Tailings Modernization Project. Our final approval will be subject to the following condition(s):

1. The final Ground Water Discharge Permit issued by the Department of Environmental Quality, Division of Water Quality (DWQ), contains a specific compliance schedule (Part I, section K). Compliance condition item #4 - *Assessment of Acidification Potential*, #6 - *Operational Monitoring Plan*, and #9 - *Closure Plan*. The information provided by Kennecott under these compliance conditions will also be subject to this Division's review and comment. Based upon our review of this future information, we may require modifications to the approved mining and reclamation plan.



2. The additional information describing the reclamation treatments provided by Kennecott on December 20, 1995, should be included in the permit application. We request that this information be provided as revised text under the appropriate section(s) of the permit application. The acreages used in the surety calculation sheet do not match the acreage shown on drawing #4710-72-072 Reclamation Plan. This drawing must be revised to accurately reflect the acreages used in the calculations.

The additional information provided by Kennecott describes several roads on the tailings expansion which Kennecott proposes to leave unreclaimed. These are listed under the heading of 11 AHAB Removal of Roads in the information provided on December 20, 1995, by Kennecott. The Division considers these features to be part of the disturbed area and subject to reclamation unless a variance has been granted. Consequently, Kennecott will need to revise the variance section of the permit application to include a description of these unreclaimed features and justification for leaving them unreclaimed.

3. Two items regarding the surety estimate remain to be resolved: (1) lime treatment of acidic spots on the future embankment, and (2) the application of mulch on the future embankment. The Division will require the surety estimate to include a line item for the surface application of limestone equivalent to 35 % of the new embankment surface. The proposed application rate of 50 tons per acre is acceptable. Therefore, this line item should be adjusted to 35 % of 780 acres at \$2,100/acre for a new line item total of \$573,300.

Kennecott's continuing acidification research may ultimately demonstrate that long term erosional and vegetative stability of the tailings embankment can be achieved without treating 35 % of the embankment with crushed limestone at 50 tons per acre. The surety amount and reclamation treatment would be adjusted, if Kennecott can demonstrate to the Division that the desired stability can be achieved by using a different treatment method or application rate.

The Division will require the addition of organic material to the new tailings embankment material to help achieve long-term vegetative success on the impoundment. For surety estimation purposes, the Division has assumed that an average organic matter content of @1 % will be necessary within the upper 6-12 inches of tailings embankment material. For calculation purposes, we have estimated that applying alfalfa hay mulch at a rate of 10 tons per acre would provide this level of organic content (other forms of organic material and application rates may also prove acceptable). The organic material will need to be adequately ripped or disced into the

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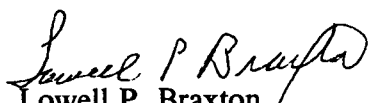
tailings material. Therefore, a new line item should be added to Kennecott's reclamation surety calculations for the application of alfalfa hay mulch at a rate of 10 tons per acre. The mulch would be applied to 780 acres at an estimated unit cost of \$1,000 per acre, for a new line item total of \$780,000.

Kennecott's continuing reclamation and acidification research may demonstrate to the Division, that long term erosional and vegetative stability of the Tailings Modernization Project can be achieved by using a different treatment method or application rate of organic matter. The reclamation surety amount would be adjusted accordingly at that time.

Adjusting the reclamation surety estimate provided by Kennecott for these two items brings the total surety amount requested by the Division to \$17,482,000 in terms of the year 2000 dollars. We have attached a revised version of Kennecott's surety estimate summary outlining these changes.

Assuming Kennecott accepts these conditions, we will proceed to publish notice of our tentative approval. This will start a 30-day public comment period. If no substantive comments are received during the public comment period, we will seek the Board's approval of the amount and form of proposed reclamation surety during their January 24, 1996 hearing. In order to meet the mailing deadline for Board packages, we must have copies of the completed Reclamation Contract (FORM MR-RC) and the reclamation surety by January 8, 1996. If you have any questions in this regard please contact me, Wayne Hedberg, or Anthony Gallegos of the Minerals Staff. Thank you for your continued cooperation and assistance in completing this permitting action.

Sincerely,


Lowell P. Braxton
Associate Director, Mining

jb
Attachment: Surety Estimate
cc: Mike Schwinn, ACOE
John Whitehead, DWQ
Minerals staff (route)
M035015.tap